SALARY PREDICTION USING SLR PROJECT REPORT

Introduction

In this project, my objective was to perform Simple Linear Regression, a fundamental machine learning technique, to model the relationship between an employee's years of experience and their corresponding salary. By developing this regression model, I aimed to gain insights into how experience influences salary levels and predict salaries for future employees based on their experience.

Dataset and Approach

For this project, I utilized a dataset named "Salary_Data.csv" containing information on employees' years of experience and corresponding salaries. The dataset was processed using Python libraries, including NumPy, Pandas, and Matplotlib. The analysis involved splitting the dataset into training and test sets to evaluate the model's performance accurately.

Data Exploration and Preprocessing

During the data exploration phase, I visualized the dataset, focusing on the relationship between experience and salary. I observed a potential linear correlation between the two variables, indicating the suitability of using Simple Linear Regression for the task.

Next, I divided the dataset into two subsets: the training set and the test set. The training set was used to train the regression model, while the test set allowed me to evaluate the model's predictive performance on unseen data.

Training the Simple Linear Regression Model

I employed the LinearRegression class from the scikit-learn library to train the Simple Linear Regression model. The training process

involved fitting the model to the training data, establishing the best-fit line that represents the relationship between experience and salary.

Model Evaluation and Visualization

After training the model, I assessed its performance using the test set. I predicted salaries based on the test set's years of experience and compared the predictions with the actual salary values. Visualization techniques, including scatter plots and regression line plots, were employed to visualize the model's predictions against the actual data points.

Conclusion

The Simple Linear Regression model successfully captured the linear relationship between an employee's years of experience and their salary. This project provides valuable insights into salary predictions based on experience, enabling businesses to make informed decisions during employee hiring or salary negotiations.

By further extending the project, the regression model's functionality can be enhanced to handle more complex datasets and additional features, paving the way for more sophisticated predictive models.

Thank you for taking the time to explore the Salary Prediction with SLR project! If you have any questions or feedback, feel free to reach out to me at osuolalefolarin@gmail.com

GitHub Repository: https://github.com/Folarinosuolale/Data-Science-Machine-Learning